

To achieve the objects and advantages of the present invention, the present invention is directed to a system and method for communicating in a point to multipoint DSL communication network. Preferably, the point to multipoint communication network is established in the environment of a home or small office, and embodiments of the invention are realized through a computer that may dynamically establish both LAN and WAN communications. Broadly, the system and method are realized by a computer that is configured to assume a role as either a Master or a Slave on a LAN. If the computer is the first (or only) computer powered up on the LAN, then it assumes the role of Master. In this role, the computer establishes a communication link with a WAN (such as with an Internet Service Provider), and directs all WAN communications over the WAN, using a WAN frequency and protocol (such as DSL). As other computers join the LAN, then WAN communications from those computers are relayed through the Master to the WAN. These communications are relayed to the Master using a LAN frequency band. If upon power-up, however, another computer is identified as already being on the LAN (and configured as a Master), then the computer assumes a Slave configuration. In this configuration, all WAN communications are directed to the WAN by way of the Master computer, and are communicated to the Master computer using a LAN frequency band. Return communications, received from the WAN, however, are broadcast directly over the LAN using the downstream frequency band of the DSL service (as opposed to the LAN frequency band), where they may be received by the appropriate Slave computer.

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line 16.

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Q2 In accordance with one [aspect] embodiment of the present invention, a method is provided for communicating in a point to multi-point digital subscriber line (DSL) network. The method may electrically connect a local loop to customer premises wiring, and establish intra-LAN computer communications among a plurality of computers located at the customer premises, over the customer premises wiring, in a LAN frequency band, wherein one of the plurality of computers is configured as a Master computer and the remaining computers are configured as Slave computers. The method may also establish a WAN communications link between the Master computer located at the customer premises and a line card located at a central office, across the local loop, wherein communications between the Master computer and the central office occur in a WAN frequency band. Thereafter, the method may direct outgoing WAN communications from any of the Slave computers to the WAN communications link, via the Master computer, and receive incoming WAN communications directly at any of the Slave computers.

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line 8.

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Q3 In accordance with another embodiment of the invention, a communication circuit is provided for equipping a computer to communicate over both a LAN and a WAN. The communication circuit comprises WAN communication circuitry for generating signals for communication over the WAN in accordance with a predetermined transmission frequency and protocol, and LAN communication circuitry for generating signals for intra-LAN

communication, the LAN communication circuitry configured to generate a signal that is transmitted in a frequency band that exceeds the highest transmission frequency of signals communicated over the WAN. The communication circuit further includes logic for carrying out certain functions. Specifically, the circuit may include first logic configured to direct outbound WAN communications through another computer on the LAN, communicating these communications through another computer within a LAN frequency band, and second logic configured to monitor inbound WAN communications and receive directly inbound WAN communications destined for the computer.

Please substitute the following clean-text paragraph for the paragraph beginning on page 14, line 14.

Two other logic segments are denoted as "master configuration" 156 and "slave configuration" 158. In accordance with a fundamental aspect of the illustrated embodiment, when a first computer 112 is powered up, it configures itself as a "master" computer. In accordance with one embodiment of the present invention, when a computer 112 is first powered up it may broadcast a message within the LAN frequency band 128, which message is communicated to all other computers capable of listening to the LAN transmissions. Assuming no other computers are powered up, then no answer is made to this "broadcast" message. After a time-out period, the computer 112 which transmitted the broadcast message assumes that it is the first, and only, computer on the local area network, and it configures itself as a master. As a part of this configuration, the computer 112 establishes a communication link with the central office 101, via WAN communication. As is known, this initial startup period involves certain signal training, including the generation of coefficients for error correction coding filters, equalizers,

etc. and this training will be understood by persons skilled in the art. Once the computer 112 is powered up, the circuit 110 may communicate on an as needed basis over both the LAN and the WAN. Of course, these communications will necessarily be controlled at a higher level within the OSI model (such as the application level).

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Please substitute the following clean-text paragraph for the paragraph beginning on page 17, line 20.

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Having provided a top-level description of a system constructed in accordance with the certain embodiments of the present invention, reference is now made to FIG. 3, which is a flow chart illustrating the top level functional operation of a computer constructed in accordance with another embodiment of the invention. In accordance with this embodiment of the invention, after power-up a computer communicates a broadcast message over the local area network to effectively announce its presence or existence on the network (step 202). The computer may then wait for a reply (or replies), which may be received during a predetermined time out period (step 204). If no acknowledgement or reply is received, then the computer configures itself as a master (step 206) and proceeds to establish communications over the WAN (step 208). Thereafter, and for the time period that the master remains active, it monitors local area network traffic to identify other computers that establish connection and communication to the local area network, and informs them of its master status, and manages the various LAN/WAN communications (step 210).

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